

WHAT IS CLAIMED IS:

- 1 1. A telephone call and voice processing system comprising:
2 switching circuitry adaptable for receiving a call, wherein the switching
3 circuitry is adaptable for connecting the call to a telecommunications device coupled
4 to the system; and
5 voice processing circuitry adaptable for automatically interacting with the call,
6 wherein the switching circuitry and the voice processing circuitry are controlled by a
7 single processing means.
- 1 2. The system as recited in claim 1, wherein the voice processing circuitry further
2 comprises a signal processing circuitry coupled to the single processing means.
- 1 3. The system as recited in claim 2, wherein the switching circuitry further
2 comprises a digital cross-point matrix coupled to the single processing means and to
3 the signal processing circuitry.
- 1 4. The system as recited in claim 3, wherein the switching circuitry further
2 comprises:
3 a first codec adaptable for receiving the call from a CO, the first codec coupled
4 to the digital cross-point matrix.

1 5. The system as recited in claim 4, wherein the switching circuitry further
2 comprises:
3 circuitry, coupled to the digital cross-point matrix, adaptable for coupling the
4 call to an extension telephone.

1 6. The system as recited in claim 1, wherein the single processing means is
2 controlled by a single set of software operable for controlling both the switching
3 circuitry and the voice processing circuitry.

1 7. The system as recited in claim 3, wherein the telecommunications device is a
2 facsimile machine, which is coupled to the digital cross-point matrix through a codec.

1 8. The system as recited in claim 3, wherein the voice processing circuitry
2 includes circuitry for playing stored sound or data to the call.

1 9. The system as recited in claim 8, wherein the circuitry for playing stored sound
2 or data to the call further includes:
3 a codec coupled to the digital cross-point matrix;
4 a transformer coupled to the codec; and
5 an analog sound source coupled to the transformer.

1 10. The system as recited in claim 8, wherein the circuitry for playing stored sound
2 or data to the call further includes:

3 digitized stored sound or data stored in a hard disk coupled to the single
4 processing means;

5 circuitry for transferring the digitized stored sound or data from the hard disk
6 to a play buffer in the signal processing circuitry; and

7 circuitry for transferring the digitized stored sound or data from the play buffer
8 to the call.

1 11. The system as recited in claim 3, wherein the telecommunications device is a
2 modem coupled through a codec to the call.

1 12. The system as recited in claim 2, wherein the signal processing circuitry further
2 includes:

3 a DTMF receiver operable for recognizing DTMF tones from the call.

1 13. The system as recited in claim 2, wherein the signal processing circuitry further
2 includes:

3 a recording buffer operable for recording the call.

1 14. The system as recited in claim 2, wherein the signal processing circuitry further
2 includes:

3 a fax tone detector operable for recognizing fax signals from the call.

1 15. The system as recited in claim 2, wherein the signal processing circuitry further
2 includes:

3 a caller ID modem operable for recognizing caller ID signals from the call.

1 16. The system as recited in claim 2, wherein the signal processing circuitry further
2 includes:

3 a call processing tone generator operable for generating and transmitting to the
4 call standard call processing tones.

1 17. The system as recited in claim 2, wherein the signal processing circuitry further
2 includes:

3 a conference bridge operable for coupling the call to one or more internal or
4 external telecommunications devices.

1 18. The system as recited in claim 1, further comprising circuitry operable for
2 recording all or a portion of the call.

1 19. The system as recited in claim 18, wherein the recording circuitry operates in
2 response to a tactilely initiated activating signal.

1 20. The system as recited in claim 19, wherein the recording circuitry further
2 comprises:

3 circuitry for coupling a recording buffer in the signal processing circuitry to the
4 call, wherein the signal processing circuitry is coupled to the single processing means.

1 21. The system as recited in claim 19, wherein the tactilely initiated activating
2 signal is produced when a user presses a record button on an extension telephone
3 coupled to the system.

1 22. The system as recited in claim 1, wherein said single processing means is a
2 single microprocessor.

1 23. The system as recited in claim 3, further comprising:
2 a play channel in the signal processing circuitry for playing a message to the
3 caller, wherein the message is downloaded from a memory coupled to the single
4 processing means;

5 a DTMF receiver in the signal processing circuitry for receiving DTMF tones
6 sent from the call; and

7 circuitry for connecting the call to the telecommunications device in response
8 to the DTMF tones.

1 24. The system as recited in claim 1, further comprising:
2 circuitry for listening to a voice signal at a telephone extension coupled to the
3 system;

4 circuitry for activating a recording sequence to record the voice signal; and

5 circuitry for storing the recorded voice signal in a digital memory.

1 25. The system as recited in claim 24, wherein the activating circuitry is tactilely
2 initiated by a user of the telephone extension.

1 26. The system as recited in claim 25, wherein the voice signal originated from the
2 call.

1 27. The system as recited in claim 25, wherein the voice signal originated from a
2 voice mail message stored in the system.

1 28. The system as recited in claim 25, wherein the tactilely initiated activating
2 signal is produced when the user presses a record button on the telephone extension
3 coupled to the system.

1 29. The system as recited in claim 24, further comprising circuitry for storing time
2 and date of call, and caller-id information associated with the call.

1 30. The system as recited in claim 24, wherein the recording of the call can be
2 activated anytime while the call is coupled to the telephone extension.

1 31. The system as recited in claim 28, further comprising:
2 circuitry for deactivating the recording of the call in response to a pressing of
3 the record button by the user.

1 32. An apparatus operable for providing information stored in a telephone
2 call/voice processor system to a user at a telephone extension without having to call a
3 resource storing the information, the apparatus comprising:

4 circuitry for receiving an activation signal from the telephone extension;
5 circuitry for coupling the telephone extension to a play channel of a signal
6 processing circuitry;

7 circuitry for downloading the information to the play channel from a memory;

8 and

9 circuitry for playing portions of the information to the user via the telephone
10 extension.

1 33. The apparatus as recited in claim 32, wherein the portions of the information
2 are played in response to receipt of signals activated by the user on the telephone
3 extension.

1 34. The apparatus as recited in claim 32, wherein the system is controlled by a
2 single processing means coupled to the signal processing circuitry, and wherein the
3 memory is coupled to the single processing means.

1 35. The apparatus as recited in claim 32, wherein the activation signal is tactilely
2 initiated by the user of the telephone extension.

1 36. The apparatus as recited in claim 35, wherein the activation signal is initiated
2 by a pressing of a button on the telephone extension by the user.

1 37. The apparatus as recited in claim 33, wherein the information includes a menu
2 of options for permitting the user to select which of the portions are played in
3 response to the signals activated by the user.

1 38. The apparatus as recited in claim 35, further comprising:
2 circuitry for receiving another signal tactilely initiated by the user of the
3 telephone extension, wherein the another signal includes coding indicating a content of
4 the information; and
5 circuitry for retrieving the information having the content from the memory and
6 providing it to the play channel.

1 39. The apparatus as recited in claim 38, wherein the signals are activated by the
2 user while the telephone extension is connected to a call.

1 40. A method for providing information stored in a telephone call/voice processor
2 system to a user at a telephone extension, the method comprising the steps of:
3 receiving an activation signal from the telephone extension;
4 coupling the telephone extension to a play channel of a signal processing
5 circuitry;
6 downloading the information to the play channel from a memory; and
7 playing portions of the information to the user via the telephone extension.

1 41. The method as recited in claim 40, wherein the portions of the information are
2 played in response to receipt of signals activated by the user on the telephone
3 extension.

1 42. The method as recited in claim 40, wherein the system is controlled by a single
2 processing means coupled to the signal processing circuitry, and wherein the memory
3 is coupled to the single processing means.

1 43. The method as recited in claim 40, wherein the activation signal is tactilely
2 initiated by the user of the telephone extension.

1 44. The method as recited in claim 43, wherein the activation signal is initiated by
2 a pressing of a button on the telephone extension by the user.

1 45. The method as recited in claim 41, wherein the information includes a menu of
2 options for permitting the user to select which of the portions are played in response
3 to the signals activated by the user.

1 46. The method as recited in claim 43, further comprising the steps of:
2 receiving another signal tactilely initiated by the user of the telephone
3 extension, wherein the another signal includes coding indicating a content of the
4 information; and
5 retrieving the information having the content from the memory and providing
6 it to the play channel.

1 47. The method as recited in claim 46, wherein the signals are activated by the
2 user while the telephone extension is connected to a call.

1 48. A method for broadcasting a voicemail message to a plurality of mailboxes
2 comprising the steps of:
3 receiving an activation signal from a user at a telephone extension;
4 prompting the user to enter a first signal for a first of the plurality of mailboxes
5 to receive a copy of the message;
6 receiving the first signal;
7 prompting the user to enter a second signal for a second of the plurality of
8 mailboxes to receive a copy of the message;
9 receiving the second signal; and
10 copying the message to the first and second mailboxes.

1 49. The method as recited in claim 48, further comprising the step of:
2 recording an introductory message by the user to be stored along with the copy
3 of the message in each of the first and second mailboxes.

1 50. The method as recited in claim 48, wherein the activation signal is initiated by
2 the user while the user is listening to the voicemail message.

1 51. The method as recited in claim 48, wherein said first and second signals are
2 each actuated by single keystrokes.

1 52. The method as recited in claim 48, further comprising the step of recording the
2 message by the user before the copying step.

1 53. The system as recited in claim 1, further comprising:
2 circuitry for receiving an activation signal from a user at a telephone extension
3 coupled to the system;
4 circuitry for prompting the user to enter a first code for a first of a plurality of
5 mailboxes to receive a copy of the message;
6 circuitry for receiving the first code;
7 circuitry for prompting the user to enter a second code for a second of the
8 plurality of mailboxes to receive a copy of the message;
9 circuitry for receiving the second code; and
10 circuitry for copying the message to the first and second mailboxes.

1 54. The system as recited in claim 53, further comprising:
2 circuitry for recording an introductory message by the user to be stored along
3 with the copy of the message in each of the first and second mailboxes.

1 55. The system as recited in claim 53, wherein the activation signal is initiated by
2 the user while the user is listening to the voicemail message.

1 56. The system as recited in claim 53, wherein the first and second signals are each
2 actuated by single keystrokes.

1 57. The system as recited in claim 53, further comprising circuitry for recording
2 the message by the user before copying the message to the first and second mailboxes.

1 58. In a telephone call and voice processing system comprising switching circuitry
2 adaptable for receiving a call, wherein the switching circuitry is adaptable for
3 connecting the call to a telecommunications device coupled to the system, and voice
4 processing circuitry adaptable for automatically interacting with the call, wherein the
5 switching circuitry and the voice processing circuitry are controlled by a single
6 processing means., a method comprising the steps of:

7 listening to a voice signal at a telephone extension coupled to the system;
8 activating a recording sequence to record the voice signal; and
9 storing the recorded voice signal in a memory.

1 59. The method as recited in claim 58, wherein the activating step is tactilely
2 initiated by a user of the telephone extension.

1 60. The method as recited in claim 58, wherein the voice signal originated from
2 the call to the system.

1 61. The method as recited in claim 58, wherein the voice signal originated from a
2 voice mail message stored in the system.

1 62. The method as recited in claim 59, wherein the tactilely initiated activating
2 signal is produced when a user presses a record button on the telephone extension
3 coupled to the system.

1 63. The method as recited in claim 58, further comprising the step of storing time
2 and date of call, and caller-id information associated with the call.

1 64. The method as recited in claim 60, wherein the recording of the call can be
2 activated anytime while the call is coupled to the telephone extension.

1 65. The method as recited in claim 62, further comprising the step of:
2 deactivating the recording of the call in response to a pressing of the record
3 button by the user.

1 66. The system as recited in claim 1, further comprising circuitry for permitting a
2 user of a telephone coupled to the system to monitor a voicemail message while the
3 message is being recorded into the user's mailbox.

1 67. The system as recited in claim 66, further comprising circuitry for permitting
2 the user to converse with a person leaving the message.

1 68. The system as recited in claim 67, wherein the user is able to converse with the
2 person leaving the message by going on-hook, which terminates a path between the
3 person leaving the message and the user's mailbox, and which connects the person
4 leaving the message with the user's telephone.